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EXAMINER	
ELPENORD, CANDAL	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/553,617	BABONNEAU ET AL.	
	Examiner	Art Unit	
	CANDAL ELPENORD	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) *1-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-25 and 27-37* is/are rejected.

7)☒ Claim(s) *26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 October 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *16 May 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 19-37 are objected to because of the following informalities:

Regarding claim 19, the phrase "a priority level, N 2". It is suggested to applicant to change "a priority level, N 2" to -a priority level, N= 2-. Similar problems exist in claims 33, 37.

Claims 20-32, 34-36 are objected since they depend on claims 19, 33.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 32 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 32, the limitation "computer program comprising program code instructions" is not a process, machine, manufacturer, or composition of matter, or any new and useful improvement thereof because there is no physical structure/connection of the computer software recited in the claim. To overcome this rejection, it is suggested to applicant to change "computer program comprising program code instructions" to --computer readable medium encoded with computer executable instructions--.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 19, 24-25, 33, 37,** are rejected under 35 U.S.C. 102(e) as being anticipated by Acharya et al (US 6,901,050 B1).

Regarding claims 19,33, 37, Acharya et al (US 6,901,050 B1) discloses method of controlling data packet traffic ("method that provides flow-based traffic shaping, and "controls the traffic with a token bucket mechanism", recited in col. 1, lines 37-44) at input (fig. 1, Node 150, recited in col. 3, lines 21-34) of a network (fig. 1, Packet Switched Network 100, recited in col. 3, lines 221-34) the traffic comprising N streams and/or sub-streams ("packet flows in a network device", recited in cool. 1, lines 53-63), which are each associated with a priority level, N= 2, each of the packets being marked with the priority level ("assign a user a Differentiated Services Code Point to priority classes", recited in col. 6, lines 51-53) associated with the stream or sub-stream ("monitoring of packet flows", recited in col. 1, lines 64 - col. 2, lines 5) to which said packet belongs ("priority class identify", recited in col. 6, lines 36-42) , wherein the method ("method that provides flow-based traffic shaping, and "controls the traffic with a token bucket mechanism", recited in col. 1, lines 37-44) comprises: a step for implementing a token bucket mechanism ("Token Bucket Mechanism", recited in col. 1, lines 37-44) with N operating levels (fig. 3, to fig. 4, High and Low priority token counters", recited in col. 7, lines 67 - col. 8, lines 7) with N token buffers ("multiple

priority queues", recited in col. 5, lines 56-67), each comprising a number of available tokens (fig. 3, Token bucket Logic 238,"may include multiple token buckets where the token bucket stores sufficient number of tokens", recited in col. 7, lines 38), the tokens ("token in the token buckets", recited in col. 55) of each of the N token buffers ("multiple priority queues", recited in col. 5, lines 56-67) being used to process one of the N priority levels (fig. 3, "token bucket s with high and low priority queues", recited in cool. 7, lines 42-49), each of the packets being accepted or rejected depending on whether or not it is possible for tokens to be assigned to the packet depending on the tokens available at least in the token buffer used to process the priority level of said packet (see, when the token buckets stores tokens that correspond to bytes of packet data ("data frames) then the corresponding output queue may accept a frame pointer to a data frame that awaits transmission by the switch or when the token bucket stores insufficient tokens, recited in col. 7, lines 29-40).

Regarding claim 24, Acharya et al the method ("traffic ("method that provides flow-based traffic shaping, and "controls the traffic with a token bucket mechanism", recited in col. 1, lines 37-44), wherein the rejected packets are discarded (when the token buckets stores insufficient tokens, the data frame is discarded, recited in col. 7, lines 38-41)

Regarding claim 25, Acharya et al the method ("traffic ("method that provides flow-based traffic shaping, and "controls the traffic with a token bucket mechanism", recited in col. 1, lines 37-44), wherein the network (fig. 1, Packet Switched Network 100,

recited in col. 3, lines 21-34) is an IP or equivalent type (header information of received packet", recited in col. 6, lines 8-16).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 19-25, 27-35, 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al (US 2002/0114334 A1) in view of Erimli et al (US 6,925,055 B1).

Regarding claims 19, 33, 37 Yang et al. (US 2002/0114334 A1) discloses method of controlling data packet traffic ("method for controlling data flow by differentiating data types", recited in paragraph 0020) at input (fig,1, NAD/Network Access Device 32, recited in paragraph 0033) of a network (fig. Internet cloud), the traffic comprising N streams and/or sub-streams ("aggregating of network sessions", recited in paragraph 0021, "aggregating of incoming and outgoing traffic", recited in paragraph 0020), which are each associated with a priority level, N= 2 ("aggregating of classes which includes best effort, and favored class", recited in paragraph 0021).

Regarding claim 20, Yang et al. discloses the method ("method for controlling data flow by differentiating data types", recited in paragraph 0020) according to claim 19, wherein the traffic comprises N sub-streams ("active network sessions", recited in paragraph 0036, lines 1-6) each corresponding to one of the N hierarchical levels ("favored and disfavored class", recited in paragraph 0021, lines 1-4) of a hierarchical stream or an aggregate of hierarchical streams ("hierarchy aggregation of classes", recited in paragraph 0021, lines 1-5)

Regarding claim 21, Yang et al. discloses the method ("method for controlling data flow by differentiating data types", recited in paragraph 0020), wherein the traffic comprises N sub-streams ("active network sessions", recited in paragraph 0036, lines 1-

6) each corresponding to one of the N types of images of a multimedia stream ("multimedia streaming such as video Conferencing , VOIP", recited in paragraph 0015, lines 10-15) or of an aggregate of multimedia streams ("aggregating of network sessions", recited in paragraph 0021, lines 1-5).

Regarding claim 22, Yang et al. discloses the method ("method for controlling data flow by differentiating data types", recited in paragraph 0020) according to claim 19, wherein the traffic comprises N streams ("active network sessions", recited in paragraph 0036, lines 1-6) each corresponding to one of the streams of a multiplex of at least two streams ("aggregating of network sessions with multiple aggregation classes", recited in paragraph 0036, lines 1-6).

Regarding claim 23, Yang et al. discloses the method ("method for controlling data flow by differentiating data types", recited in paragraph 0020) according to claim 19, wherein the traffic comprises N streams and/or sub-streams ("active network sessions", recited in paragraph 0036, lines 1-6) belong to a same class of service ("bandwidth guaranteed class", recited in paragraph 0035, lines 1-8).

Regarding claim 24, Yang et al. discloses the method ("method for controlling data flow by differentiating data types", recited in paragraph 0020) according to claim 19, wherein the rejected packets are discarded (see, fig. 5, "steps leading to discard the packet", recited in paragraph 0055).

Regarding claim 25, Yang et al. discloses method ("method for controlling data flow by differentiating data types", recited in paragraph 0020) according to claim 19, wherein the network (fig. 1, Internet cloud) is of an IP or equivalent type (see, Source IP and Destination addresses", recited in paragraph 0036, lines 6-10).

Regarding claim 28, Yang et al. discloses the method ("method for controlling data flow by differentiating data types", recited in paragraph 0020), wherein, for each priority level ("priority level", recited in paragraph 0059, lines 5-17) apart from the priority level having the highest priority ("highest priority queues", recited in paragraph 0059, lines 5-17), a quantity of tokens reserved exclusively for the packets ("the number packets to be served is determined by the number of tokens available in the token bucket", recited in paragraph 0067) having said priority level is guaranteed ("serving the highest priority queues first", recited in paragraph 0059, Serving packets in the guaranteed queues", recited in paragraph 0048, lines 1-9).

Regarding claim 31, Yang et al. discloses method ("method for controlling data flow by differentiating data types", recited in paragraph 0020), wherein: the packets accepted ("the network access device serves data packets for a given class if the corresponding token bucket contains sufficient tokens", recited in paragraph 0041) by the token bucket mechanism ("to control the serving rates according to the Token Bucket algorithm", recited in paragraph 0014) with N operating levels are placed in a queue ("best effort class and guaranteed class", recited in paragraph 0048) and said method ("method for controlling data flow by differentiating data types", recited in

paragraph 0020) furthermore comprises a step for implementing a token bucket mechanism ("the network access device (NAD) adjusts the serving rate for arrival rates using a Token Bucket algorithm", recited in paragraph 0040) with only one level of operation ("each token bucket has maximum capacity which sets limit on the peak rate", recited in paragraph 0041, lines 9-11) with only one token buffer ("placeholder for the tokens", recited in paragraph 0041, lines 1-7), so as to take the packets contained in the queue ("data packets in the priority queues are served", recited in paragraph 0058) and send them on the network (fig. 1, Internet cloud as the network) in carrying out a smoothing of the traffic by limiting the instantaneous bit rate to a value ("setting the desired rate to the arrival rates where the network access device creates a token generation rate equal to the desired serving rate", recited in paragraph 0042) acceptable by the network (fig. 1, Internet cloud as the network).

Regarding claim 32, Yang et al. discloses a computer program comprising program code instructions for the execution of the steps of the method according to claim 19, when said program is executed on a computer ("computer readable storage medium with executable code that implements rate-control algorithm, and the "token bucket algorithm", recited in claims 21-23 page 8).

Yang et al. discloses all the claimed limitation with the exception of being silent with respect to the claimed features: **regarding claims 19**, **33, 37,** a step for implementing a token bucket mechanism with N operating levels with N token buffers, each comprising a number of available tokens, the tokens of each of the N token buffers

being used to process one of the N priority levels, each of the packets being accepted or rejected depending on whether or not it is possible for tokens to be assigned to the packet depending on the tokens available at least in the token buffer used to process the priority level of said packet; **regarding claims 27**, **34**, wherein the tokens of the N token buffers are shared between the N priority levels, and a packet with priority level i can be assigned tokens from a token buffer associated with a priority level j having lower priority when the tokens available in the token buffer of the priority level i are not sufficient; **regarding claims 29**, **35**, wherein the assigning of tokens to a packet of priority level i is done in a discontinuous packet mode and the method comprises assigning: either tokens available in the token buffer of priority level i; or tokens available in a token buffer of a lower priority level j, when the tokens available in the token buffer of priority level i are not sufficient; **regarding claim 30**, wherein the assigning of tokens to a packet of priority level i is done in a continuous bit mode and the method comprises assigning: tokens available in the token buffer of priority level i; and, as a complement, tokens available in at least one token buffer of priority level j having lower priority, when the tokens available in the token buffer of priority level i are not sufficient.

However, Erimli et al. in the same field of endeavor discloses the above claimed features: **regarding claims 19**, **33, 37,** each of the packets being marked with the priority level (priority class identifying", assign of DSCP/Differentiated Services Code Point to the packet", recited in col. 6, lines 31-48) associated with the stream or sub-stream to which said packet belongs ("the packet rate or volume of packets through the

network switch may be controlled and facilitating of quality of service", recited in col. 1, lines 38-45), a step for implementing a token bucket mechanism ("token bucket mechanism that controls the traffic transmitted by the network switch", recited in col. 1, lines 389-45) with N operating levels (fig. 3, "Token Bucket High, Token Bucket Low", recited in col. 7, lines 33-40) with N token buffers ("the token buckets correspond to multiple priority queues", recited in col. 1, lines 53-62) each comprising a number of available tokens ("the token bucket stores sufficient number of tokens", recited in col. 7, lines 24-30), the tokens of each of the N token buffers ("the token buckets correspond to multiple priority queues", recited in col. 1, lines 53-62) being used to process one of the N priority levels (fig. 2, Token Bucket Logic 228, recited in col. 5, lines 51-57, "the token bucket logic performs traffic shaping per priority queue basis", recited in col. 5, lines 51-57) each of the packets being accepted ("when a sufficient number of tokens, the output queue may accept a data frame", recited in col. 7, lines 21-30) or rejected depending on whether or not it is possible for tokens to be assigned to the packet ("each of the tokens correspond to a byte of one or more received packets", recited in col. 2, lines 24-29) depending on the tokens available ("determined whether to accept packet based on a number of tokens stored", recited in col. 2, lines 13-16) at least in the token buffer ("stores of tokens so that transmission of packets by the switch may be controlled", recited in col. 7, lines 21-48) used to process the priority level of said packet ("priority level of the data frame", recited in col. 7, lines 30-33); **regarding claim 27**, **34**, wherein the tokens of the N token buffers are shared between the N priority levels (fig. 3, "Token Bucket High, Token Bucket Low", recited in col. 7, lines 33-40) and a packet with priority

level i ("the token bucket logic that may performs traffic shaping per priority where the token bucket logic controls the acceptance of data frames", recited in col. 5, lines 51-57) can be assigned tokens from a token buffer ("stores of tokens so that transmission of packets by the switch may be controlled", recited in col. 7, lines 21-48) associated with a priority level j having lower priority when the tokens available in the token buffer of the priority level i ("high priority queues may be used for frames having a lower access latency ("multimedia applications", recited in col. 5, lines 58-67) are not sufficient ("data frames downgraded to lower priority when the token bucket stores insufficient number of tokens", recited in col. 7, lines 21-32, additionally, "the count value for high and low priority bucket counter may vary", recited in col. 59-67); **regarding claims 29, 35**, wherein the assigning of tokens to a packet ("each of the tokens correspond to one or more received data packets", recited in col. 1, lines 59-62) of priority level i ("assign user priority or Differentiated Services Code Point to the packet", recited in col. 6, lines 41-48) is done in a discontinuous packet mode and the method comprises assigning: either tokens available in the token buffer of priority level i ("the token bucket counters may vary for low and high priority bucket counters", recited in col. 59-67); or tokens available in a token buffer of a lower priority level j ("the token bucket counters may vary for low and high priority bucket counters", recited in col. 59-67), when the tokens available in the token buffer of priority level i are not sufficient ("downgraded to a lower priority level when there are insufficient tokens", recited in col. 7, lines 21-32); **regarding claim 30**, wherein the assigning of tokens to a packet ("each of the tokens correspond to one or more received data packets", recited in col. 1, lines 59-62) of

priority level i ("assign user priority or Differentiated Services Code Point to the packet", recited in col. 6, lines 41-48) is done in a continuous bit mode ("the token bucket counters may vary for low and high priority bucket counters", recited in col. 59-67, additionally, "adding a high priority token to low priority token bucket", recited in col. 7, lines 41-48) and the method comprises assigning: tokens available in the token buffer of priority level i; and, as a complement, tokens available in at least one token buffer of priority level j having lower priority ("the token bucket counters may vary for low and high priority bucket counters", recited in col. 59-67), when the tokens available in the token buffer of priority level i are not sufficient ("downgraded to a lower priority level when there are insufficient tokens", recited in col. 7, lines 21-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Yang et al. by using features as taught by Erimli et al. The system for traffic shaping with multiple token buckets with priority queues can be substituted for use in to teaching features of Yang et al. in order to provide traffic shaping per port per priority queue basis (See Col. 1, lines 38-62 for motivation).

9. **Claim 36** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al (US 2002/0114334 A1) in view of Erimli et al (US 6,925,055 B1) as applied to claim 33 above, and further in view of Oldak et al (US 7,085,236 B2).

Regarding claim 36, Yang et al. and Erimli et al. discloses all the claimed limitation with the exception of the claimed features: wherein said network equipment belongs to the group comprising: network equipment located between a network of an

application or service provider and a network of a network service provider, constituting said network at whose input data packet traffic is controlled; and routers included in the nodes of a network of a network service provider, constituting said network at whose input a data packet traffic is controlled.

However, Oldak et al (US 7,085,236 B2) in the same field of endeavor discloses the above claimed features: wherein said network equipment (fig. 1, Network Cores Routers 34, 36, 40, recited in col. 4, lines 39-52) belongs to the group comprising: network equipment located between a network of an application or service provider and a network of a network service provider (fig. 1, Network 10, recited in col. 7, lines 32-60) constituting said network at whose input data packet traffic is controlled ("controlling network traffic by class using DiffServ", recited in col. 5, lines 49-56); and routers (fig. 1, Edge Routers 28, 26, 30, recited in col. 4, lines 39-52) included in the nodes (fig. 1, Nodes 28,26, 30, recited in col. 4, lines 39-52) of a network (fig. 1, Network 10) of a network service provider ("different level of forwarding assurances for IP packets by a service provider", recited in col. 6, lines 26-36), constituting said network (fig. 1, Network 10) at whose input a data packet traffic is controlled ("using token buckets, the routers at the edge monitor and mark data packets", recited in col. 7, lines 32-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Yang et al. with Erimli et al. by using features as taught by Oldak et al. in order to provide differentiated services by marking packets at the edge of a network (See Col. 2, lines 51-67 for motivation).

Allowable Subject Matter

10. **Claim 26** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Milliken et al (US 7,095,753 B1), and Appala et al (US 6,862,265 B1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CANDAL ELPENORD whose telephone number is (571)270-3123. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Candal Elpenord/
Examiner, Art Unit 2616

/Kwang B. Yao/
Supervisory Patent Examiner, Art Unit 2616